# 109-1 Full Curriculum of Da-Yeh University

Information				
Title	Embedded System	Serial No./ID	2059 /ENI4014	
Required/Credit	Optinal /3	Time/Place	(Tue)678 / H727	
Language	Chinese	Grade Type	Number	
Lecturer /Full- or Part-time	Yih-Fang Chang /Part-time	Graduate Class	Graduating Class	
School System / Dept / Class, Grade	Bachelor / College of Engineering / Class 1, Grade 4			
Office Hour / Place	(Tue) 13:20~14:10, (Wed) 13:20~14:10, (Thu) 13:20~14:10, (Thu) 14:20~15:10 / H215			
Lecturer	n.a.			

#### Introduction

A student can take the ability of basic micro-computer and embedded system design

- 1.1 The basic ability of micro-computer and embedded system application
- 1.2 The practical ability of micro-computer and embedded system application
- 1.3 The knowledge of the micro-computer and embedded system with the followings:

  Software prescription, sensor, dedicated machine, human machine interface, wire communication

#### Outline

Unit 1: Micro computer and embedded Systems and Codes

Unit 2: Software prescription ability

Unit 3: Sensors

Unit 4: Dedicated machine

Unit 5: Human machine interface and Wire communication

### Prerequisite

Basic physics and electrical circuit

## The Relationship Between Courses and Departmental Core Competencies and Basic Skills

- Ability to apply knowledge of mathematics, science, and engineering.
- Knowledge of contemporary issues; an understanding of the impact of engineering solutions in an environmental, societal, and global context; and the ability and habit to engage in life-long learning.
- Ability to design and conduct experiments, as well as to analyze and interpret data.
- Ability to apply techniques, skills, and modern tools necessary for engineering practice.
- 🌏 Ability to design an engineering system, component, or process.
- Ability to manage project (including budgeting), communicate effectively, work in multi-disciplinary environment, and function on teams.

- Ability to identify, formulate, research literature and analyses complex engineering problems reaching substantial conclusions.
- Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice, and a sense of respect for diversity.

Teaching Plan						
Core Capability	Weight(%	Ability	Teaching	Assessment and	Core	Final
	) [A]	index(Performance	Methods	Weight	Competenc	y Exam
		Indicators)			Learning	Grades
					Outcomes	【C=B*A
					<b>(</b> B <b>)</b>	
Ability to apply	5	Ability to apply	Lecturing	Assessment on	Total: 100	5
knowledge of		knowledge of	Practical	Teamwork: 20%		
mathematics,		mathematics, science,	Operation	Written Report:		
science, and		and engineering.	(Experiment,	20%		
engineering.			Machine	Course		
			Operation	Participation: 20%		
			Group Work	Midterm Exam:		
				20%		
				Experiment		
Ability to design	15	Ability to design and	Lecturing	Operation: 20%  Course	Total: 100	15
and conduct	13	conduct experiments, as	Practical	Participation: 20%	TOtal. 100	13
experiments, as		well as to analyze and	Operation	Midterm Exam:		
well as to analyze		interpret data.	(Experiment,	20%		
and interpret		meorproc data.	Machine	Assessment on		
data.			Operation	Teamwork: 20%		
			-	Experiment		
				Operation: 20%		
				Written Report:		
				20%		
Ability to apply	10	Ability to apply	Lecturing	Midterm Exam:	Total: 100	10
techniques, skills,		techniques, skills, and	Group Work	20%		
and modern tools		modern tools necessary	Practical	Course		
necessary for		for engineering practice.	Operation	Participation: 20%		
engineering			(Experiment,	Written Report:		
practice.			Machine	20%		
			Operation	Assessment on		
				Teamwork: 20%		
				Experiment		
Al Transfer		Al-TPC Control Control	Described	Operation: 20%	T. (.) 400	
Ability to design	20	Ability to design an	Practical	Written Report:	Total: 100	20
an engineering		engineering system,	Operation	20%		
system,		component, or process.	(Experiment, Machine	Assessment on		
component, or process.			Operation	Teamwork: 20% Course		
ρι ουσου.			Lecturing	Participation: 20%		
			Group Work	Midterm Exam:		
			C.Oup WOIN	20%		
				Experiment		
				Operation: 20%		

Ability to manage project (including budgeting), communicate effectively, work in multi-disciplinary environment, and function on teams.	20	Ability to manage project (including budgeting), communicate effectively, work in multi-disciplinary environment, and function on teams.	Group Work Practical	Written Report: 20% Assessment on Teamwork: 20% Course Participation: 20% Midterm Exam: 20% Experiment Operation: 20%	Total: 100	20
Ability to identify, formulate, research literature and analyses complex engineering problems reaching substantial conclusions.	20	Ability to identify, formulate, research literature and analyses complex engineering problems reaching substantial conclusions.	Lecturing Practical Operation (Experiment, Machine Operation Group Work	Written Report: 20% Assessment on Teamwork: 20% Course Participation: 20% Midterm Exam: 20% Experiment Operation: 20%	Total: 100	20
Knowledge of contemporary issues; an understanding of the impact of engineering solutions in an environmental, societal, and global context; and the ability and habit to engage in life-long learning.	5	Knowledge of contemporary issues; an understanding of the impact of engineering solutions in an environmental, societal, and global context; and the ability and habit to engage in life-long learning.	Lecturing Practical Operation (Experiment, Machine Operation Group Work	Midterm Exam: 20% Course Participation: 20% Assessment on Teamwork: 20% Written Report: 20% Experiment Operation: 20%	Total: 100	5
Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice, and a sense of respect for diversity.	5	Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice, and a sense of respect for diversity.	Practical Operation (Experiment, Machine Operation Lecturing Group Work	Midterm Exam: 20% Course Participation: 20% Assessment on Teamwork: 20% Written Report: 20% Experiment Operation: 20%	Total: 100	5

## **Grade Auditing**

Midterm Exam: 20%

Experiment Operation: 20% Assessment on Teamwork: 20% Course Participation: 20% Written Report: 20%

Book Type (Respect intellectual property rights. Please use official textbooks and do not illegally photocopy others' works.)

Book Type Book name Author

Textbook 微電腦嵌入式系統應用與實習

普特企業有限公司

Lesson Plan						
Weeks	Content	Teaching Methods				
1	Microcomputer control practice and operation &	Lecturing、 Practical Operation				
	Intellectual Property Protection (use legitimate textbooks	(Experiment, Machine Operation, Group				
	only) & Traffic safety Propaganda	Work				
2	Operating system installation and instruction introduction	Lecturing、 Practical Operation				
		(Experiment, Machine Operation, Group				
		Work				
3	Setting and upload of development and design platform	Lecturing、 Practical Operation				
		(Experiment, Machine Operation, Group				
		Work				
4	Software and command introduction	Lecturing, Practical Operation				
		(Experiment, Machine Operation, Group Work				
5	Software and command introduction	Lecturing, Practical Operation				
3	Software and command introduction	(Experiment, Machine Operation, Group				
		Work				
6	Software and command introduction	Lecturing、 Practical Operation				
		(Experiment, Machine Operation, Group				
		Work				
7	Application of Microcomputer Interface-I/O	Lecturing、 Practical Operation				
		(Experiment, Machine Operation, Group				
		Work				

8	Application of Microcomputer Interface-I/O	Lecturing、 Practical Operation	
		(Experiment, Machine Operation,	Group
		Work	
9	Midterm exam	Lecturing、 Practical Operation	
		(Experiment, Machine Operation,	Group
		Work	
10	Application of Microcomputer Interface-Analog Application	Lecturing、 Practical Operation	
		(Experiment, Machine Operation,	Group
		Work	
11	Application of Microcomputer Interface-Analog Application	Lecturing、 Practical Operation	
		(Experiment, Machine Operation,	Group
		Work	
12	Application of Microcomputer Interface-Serial Application	Lecturing、 Practical Operation	
		(Experiment, Machine Operation,	Group
		Work	
13	Application of Microcomputer Interface-Serial Application	Lecturing, Practical Operation	
		(Experiment, Machine Operation,	Group
		Work	
14	Application of Microcomputer Interface-Serial Application	Lecturing, Practical Operation	
		(Experiment, Machine Operation,	Group
		Work	
15	Application of Microcomputer Interface-Communication	Lecturing, Practical Operation	
	Application	(Experiment, Machine Operation,	Group
		Work	
16	Application of Microcomputer Interface-Communication	Lecturing, Practical Operation	0
	Application	(Experiment, Machine Operation,	Group
		Work	
17	Application of microcomputer interface- man machine	Lecturing, Practical Operation	Croun
	interface	(Experiment, Machine Operation,	Group
40	Final parasit	Work	
18	Final report	Lecturing, Practical Operation	Croup
		(Experiment, Machine Operation,	Group
		Work	